AE2302 Water Treatment Processes and Technology 7.5 credits

Vattenreningsprocesser och teknik

This is a translation of the Swedish, legally binding, course syllabus.

Establishment

Course syllabus for AE2302 valid from Autumn 2010

Grading scale

A, B, C, D, E, FX, F

Education cycle

Second cycle

Main field of study

Specific prerequisites

180 credits academic studies in Engineering, Science, Economics or Planning including at least 50 credits in mathematics, Physic, Chemistry and Fluid Mechanics together with documented proficiency in English B or equivalent (TOEFL, IELTS e g).

Program students: courses from year 1 in Master programme TEESM or TWSTM.

Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

Intended learning outcomes

The overall aim of the course is to give knowledge of process technology for present and future water purification and wastewater treatment, including construction, dimensioning, operation and management of treatment plants.

After the course you should be able to:

- Calculate how to construct and manage different processes involved in sustainable water and wastewater treatment.
- Apply chemical and biological knowledge that the processes are based on for use in case studies.
- Apply innovative technologies for new systems and improvement of old systems to get better function and fulfill the requirement of the society.
- Propose sludge treatment technologies.
- Use computer models for development and design of processes.
- Operate and optimize treatment plants.

Course contents

The course presents: different processes in water and wastewater treatment in natural and constructed systems, biological treatment processes particularly for the removal of phosphorus and nitrogen, processes based on filtration and chemical precipitation, sludge treatment technologies, systems and methods for recovery of nutrients from sewage, methods for process control and optimisation.

Course literature

Compendia and articles on treatment process for water and wastewater, sludge treatment and calculation models.

Examination

- ÖVN1 - Assignment, 1.5 credits, grading scale: P, F
- ÖVN2 - Assignment, 1.5 credits, grading scale: P, F
- TEN1 - Examination, 4.5 credits, grading scale: A, B, C, D, E, FX, F

Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.

The examiner may apply another examination format when re-examining individual students.

If the course is discontinued, students may request to be examined during the following two academic years.

Other requirements for final grade

Written examination (TEN1; 4,5c)
Modelling exercise (ÖVN1; 1,5c)
Laboratory exercise (ÖVN2; 1,5c)

Ethical approach

- All members of a group are responsible for the group's work.
- In any assessment, every student shall honestly disclose any help received and sources used.
- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.